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ABSTRACT

**REFRIGERATOR AND NECK TUBE ARRANGEMENT  
FOR CRYOSTATIC VESSEL**

5           A cryogenic chamber comprising an outer vacuum vessel (9), an inner cryogen vessel  
(11), a turret (40) housing a neck tube (8) itself providing external access to the inner cryogen  
vessel (11), and a pulse tube refrigerator (20) itself comprising at least one pulse tube and at  
least one regenerator tube. The pulse tube refrigerator is located within a vacuum contained  
between the outer vacuum vessel (9) and the inner cryogen vessel (11) and the pulse tube  
10 refrigerator (20) and the neck tube (8) share a single turret (40). The cooling stage(s) (6, 7) of  
the pulse tube refrigerator (20) is/are rigidly mechanically connected to the neck tube (8) by  
highly conductive thermal links. The pulse tube(s) and regenerator tube(s) are displaced away  
from the neck tube and from each other.

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[Fig. 3]